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09/980,287	07/18/2002	Konstantinos Samaras	Samaras 7-5-7	1491

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EXAMINER

DUONG, FRANK

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 01/08/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/980,287

Applicant(s)

SAMARAS ET AL.

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This Office Action is a response to the amendment dated 10/14/2003. Claims 1-14 are pending in the application.

### *Drawings*

2. The drawings were received on 10/14/2003. These drawings are approved.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Klein et al (FRAMES MULTIPLE ACCESS FOR UMTS, IEE, pages 1-8) (hereinafter "Klein").

Regarding **claim 1**, in accordance with Klein reference entirety, Klein discloses a method of transmitting in time slots in TDMA frames user data in burst (see page 3, Figure 3; *spread speech/data burst 1 or 2*) of GSM format, each burst (spread speech/data burst 1 or 2) comprising data portions (page 3, Figure 3; *Data symbols*) separated by a training sequence (*Training sequence*), the method comprising transmitting data of a first user in a first data portion (*Data symbols before Training sequence depicted in Figure 1*) of a burst before the training sequence and data of a second user in a second data portion (*Data symbols after Training sequence depicted in*

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*Figure 1*) of the burst after the training sequence (page 2, last paragraph, Klein discloses within one time slot of length 577  $\mu$ s, more than one burst of corresponding length can be transmitted. These bursts within the same time slot can be allocated to different users. Moreover, *page 4*, Klein further discloses spread burst 1 or two, for uplink, up to 8 different users per time slot).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Klein further discloses transmitting each data portion in a sub time-slot allocated to a different user (page 2, last paragraph, Klein discloses within one time slot of length 577  $\mu$ s, more than one burst of corresponding length can be transmitted. These bursts within the same time slot can be allocated to different users).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Klein further discloses transmitting user data in each time slot in a burst structure, user data being transmitted in each sub time slot in a corresponding burst structure (page 2, last paragraph, Klein discloses within one time slot of length 577  $\mu$ s, more than one burst of corresponding length can be transmitted. These bursts within the same time slot can be allocated to different users and page 3, Figure 3, spread burst 1 or 2).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Klein further discloses in which a burst structure has  $n$  bits, the method including partitioning each time slot into  $m$  sub time slots (spread bursts), and transmitting user data in each sub time slot (spread burst) in a corresponding burst structure  $n/m$  bits (page 2, last paragraph, Klein discloses within one time slot of length

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*577  $\mu$ s, more than one burst of corresponding length can be transmitted. These bursts within the same time slot can be allocated to different users and page 3, Figure 3, spread burst 1 or 2).*

Regarding **claim 5**, in addition to features recited in base claim 3 (see rationales discussed above), Klein further discloses in which the user data comprises speech (see *page 3, Figure 1, spread speech/data burst 1 or 2*).

Regarding **claim 6**, in addition to features recited in base claim 1 (see rationales discussed above), Klein further discloses in which the TDMA system is an EDGE packet switched network (*page 5, Fig. 4, Klein UMTS, which EDGE system is evolved from*).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Klein further discloses in which the TDMA system is a wireless system (*page 1, UMTS*), the method including encoding (Fig. 4; Channel coding) in up-link data from  $p$  users such that each forms  $1/p$  of an RLC/MAC block, wherein the data from each user is encoded into a respective one of  $p$  sub-time-slots (*page 5, Fig. 4, Klein discloses the mapping of layer 2 PDUs on layer 1 physical channels. The recitation thereof teaches the claimed limitation in a manner set forth*).

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales discussed above), Klein further discloses transmitting the RLC/MAC block over four TDMA frames (*page 5, Fig. 4, Klein shows layer 2 PDUs mapped into four TDMA frames*).

Regarding **claim 9**, in addition to features recited in base claim 1 (see rationales discussed above), Klein further discloses including encoding the user data into an

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RLC/MAC block for transmission, and transmitting the RLC/MAC block in a sub-time-slot over a plurality of frames (page 5, Fig. 4, Klein shows layer 2 PDUs mapped into four TDMA frames).

Regarding **claim 10**, in addition to features recited in base claim 1 (see rationales discussed above), Klein further discloses including encoding (Fig. 4; Channel coding) user data associated with at least two users is encoded into a single RLC/MAC block, and transmitting the portions of the RLC/MAC block associated with respective users in respective sub-time-slots (page 5, Fig. 4, Klein shows layer 2 PDUs mapped into four TDMA frames).

Regarding **claim 11**, in addition to features recited in base claim 1 (see rationales discussed above), Klein further discloses including transmitting the user data in each time slot in a burst structure having  $n$  bits, portioning each time slot into  $m$  sub time slots, and transmitting user data in each sub time slot in a corresponding burst structure  $n/m$  bits (*see link adaptation disclosed on page 4 and slot structure depicted in Figure 3*).

Regarding **claim 12**, in addition to features recited in base claim 11 (see rationales discussed above), Klein further discloses in which the user data comprises speech (*page 3, Figure 3, spread speech/data burst 1 or 2*).

Regarding **claim 13**, in addition to features recited in base claim 12 (see rationales discussed above), Klein further discloses in which the TDMA system is a wireless system (*page 1 and thereafter; UMTS*), the method including encoding, in up-link data, from  $p$  users is encoded such that each forms  $1/p$  of an RLC/MAC block,

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wherein the data from each user is encoded into a respective one of p sub-time-slots (page 4, Klein discloses link adaptation and parameters and page 5, Fig. 4, Klein shows layer 2 PDUs mapped into four TDMA frames. *Thus, the recitation thereof inherent teaches the claimed limitation in a manner set forth*).

Regarding **claim 14**, in addition to features recited in base claim 1 (see rationales discussed above), Klein further discloses including transmitting the RLC/MAC block is transmitted over four TDMA frames (page 5, Fig. 4, Klein shows layer 2 PDUs mapped into four TDMA frames).

### ***Response to Arguments***

4. Applicant's arguments filed 10/14/2003 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response filed 10/14/2003.

In the Remarks of the outstanding response, on page 5, pertaining the rejection of claims 1-14, Applicants allege Klein reference does not teach the claimed invention. To support the allegation, Applicants state "*Klein on page 38, left hand column, ... can be allocated to a single user in the same time slot*".

In response Examiner respectfully disagrees. The concept of "two users can share a time slot" is well known in EDGE system or in UWC-136 system (see Meche, UWC-136 Self Evaluation Updates, *page 60, section 2.6, accompanied this Office Action for explaining Examiner's response*). The higher data rate is achievable due to the link adaptation technique of Frodigh et al (USP 5,909,469) (accompanied Office

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Action dated 08/05/03) and the Wideband TDMA technique of Klein. As shown in the Pike reference (accompanied this Office Action to for explaining Examiner's response), the ETSI/SMG has proposed five concept groups (Alpha, Beta, Gamma, Delta and Epsilon) (Pike, page 1, section 2.1) radio interface for the UMTS. Each of the five groups has evolved into a specific standardized protocol. EDGE and UWC-136 is evolved from the Gamma and Delta groups. Thus, the idea of "two users can share a time slot" is no stranger to those involved in the technical work of developing the Radio Interface for the UMTS. As for Klein's teaching, contradistinction to the Applicants' allegation, Klein, as clearly pointed out in the Office Action, teaches (see Figure 3 and the description on pages 3-4 and page 2, Table 1; Users/slot) the spreading speech/data burst 1 or 2 can be used for all services from speech up to 2 Mbit/s for up to 8 different users per time slot. In light of the claim language, Klein clearly read on the claimed invention.

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Delprat et al (USP 5,398,247).

Pike, THE RADIO INTERFACE FOR UMTS, IEE, pages 7/1-7/24, 1998.

Meche, UWC-136 Self Evaluation Updates, pages 1-84, 1998.



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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

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A handwritten signature in black ink, appearing to read 'Frank Duong', with a stylized, cursive script.

Frank Duong  
Examiner  
Art Unit 2666

December 30, 2003